12/13/05

CECW-PC

MEMORANDUM FOR CHIEF, CECW-NAD (ATTN: Jeff Groska)

SUBJECT: Documentation of Review Findings for Final General Reevaluation Report and Final Supplemental Environmental Impact Statement, Poplar Island Environmental Restoration Project, Chesapeake Bay, Maryland, April 2005.

1. The HQUSACE documentation of review findings for the final feasibility report and final environmental impact statement is attached. The State and Agency review has been completed, and the one comment received from this review period has been addressed in a satisfactory manner.

2. Please contact Mark Matusiak at 202-761-5909 with any questions.

ROBYN S. COLOSIMO
Chief, Office of Water Project Review
Policy and Policy Compliance Division

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12 December 2005

HQUSACE Documentation of Review Findings for
Final General Reevaluation Report and
Supplemental Environmental Impact Statement
Poplar Island Environmental Restoration Project
Chesapeake Bay, Maryland

1. Background.

After the submission of the Draft GRR/SEIS, and based on agency consultation and preliminary evaluations conducted by CENAB, an additional Alternative was added for consideration to the Poplar Island GRR/SEIS. This alternative incorporates an open-water embayment into the northern lateral expansion of the existing project. Based on the results of the plan formulation (Chapter 4) and impacts evaluation (Chapter 5), this Alternative (Alternative 3) became both the environmentally preferred plan and the recommended plan for the Poplar Island GRR/SEIS (Chapter 6). Changes to the background information listed in Section 1 based on this new recommended plan are presented below.

a. Location. The Poplar Island Environmental Restoration Project is located in the Chesapeake Bay, approximately 39 miles south-southeast of the Port of Baltimore, and two miles northeast of Tilghman Island in Talbot County, Maryland.

b. Authority. The project would be carried out under the policies and cooperative agreement requirements of Section 204 of WRDA 1992, except that the subsection (e) on project cost limitations does not apply to the project.

c. Problem Summary. Approximately 10,000 acres of remote or island habitat has been lost throughout the Chesapeake Bay in the last 150 years. Dredged material from the Upper Chesapeake Bay Approach Channels to the Port of Baltimore is being beneficially used to restore 1,140 acres of wetland and upland habitat (about 570 acres wetlands and 570 acres uplands) at the Poplar Island Environmental Restoration Project, and it is estimated that by 2014, it will provide up to 40 million cubic yards of dredged material placement capacity. To date about 12 million cubic yards of material has been placed at the site. Despite the capacity provided by the authorized scale of the project, there is a critical short-term need for dredged material capacity in the near term for the continued maintenance of the port channels. Several of the most economical means of providing for future dredged material placement, which are identified as the base plan in the Dredged Material Management Plan, have been precluded or will be phased out by state law. These include use of the Deep Trough open water site near Annapolis, use of the Pooles Island open water site (2010), and further dike raising at Hart-Miller Island (2009). The expansion of the Poplar Island project provides the opportunity to increase island habitat restoration while addressing the needs for dredged material placement capacity.

d. Plan Formulation. The study evaluated a range of alternatives for lateral expansion only of the project, vertical expansion only, and combinations of vertical and lateral expansion. Various

scales and orientations were considered and screened based on public coordination, engineering criteria, and environmental impact considerations. Once the lateral scale and orientation of the expansion was established, cost effectiveness and incremental cost analysis was accomplished based on six alternatives, which considered varying proportions of expanded wetland and upland habitat development (50%/50%, 55% wetland /45% upland, 60% wetland, 40% upland) and combining those alternatives with a 5-foot raising of the authorized uplands. In addition, consideration was given to means of completing the authorized Poplar Island project cells, providing educational/recreational features, and accepting dredged material from additional Federal navigation channels in Chesapeake Bay, which provide the southern approach from the Port of Baltimore to the C&D Canal and other non-Federal channels. An additional option suggested by NMFS to consider including open water cells in the project is also being given consideration.

After the Draft GRR/SEIS was issued to the public, and in response to agency comments from NMFS, USEPA, USFWS, MDNR, and MDE, the alignment with the open-water embayment, as initially proposed by NMFS and modified by CENAB, became an additional alternative considered in the plan formulation (Chapter 4) and impacts evaluation (Chapter 5). The alignment with the open-water embayment would increase the complexity and diversity of habitat types with the lateral expansion, and provide a physical connection between the wetlands and deeper waters. In addition, the alignment with the open-water embayment would impact the least amount of borrow area outside the footprint of the lateral expansion, would produce the greatest number of environmental benefits (9,768 ICU),and is the cost-effective alternative (Chapter 4).

e. Study Recommendations. The recommended plan consists of a 575-acre lateral expansion component to the north-northeast of the existing Poplar Island, consisting of a 60% wetland/40% upland habitat creation, with a 5-foot raising of the upland dikes for the authorized project. The wetland habitat would include high marsh, low marsh, mudflat/intertidal areas, channels, and bird islands. The plan also includes the following actions to close the existing Poplar Island project: raising the temporary height of the dikes in cell 6 from +23 to +25 feet MLLW, closing Cell 6 and relocating the access channel and turning basin, and relocating inflow support and discharge structures to accommodate closure of Cell 6. The recommended plan includes the acceptance of materials from additional Federal channels not included in the original EIS. In addition, the recommended plan includes recreational and educational components that are compatible with the project's ecosystem restoration purpose.

Based on a revised assessment that included the alignment with the open-water embayment, the results of the plan formulation, engineering screening, environmental benefits calculation, cost-effective/incremental cost analysis, and the impacts evaluation, the alignment with the open-water embayment, plus a 5-ft raising of the existing upland Cells 2 and 6 was chosen as the recommended plan (Chapters 4 and 6). Therefore, the recommended plan of the Poplar Island GRR/SEIS consists of the expansion of the existing PIERP to the north and northeast, with a 575-acre lateral expansion component consisting of 29 percent wetland habitat (165 acres), 47 percent upland habitat (270 acres), and 24 percent open water (130 acres); plus a vertical

expansion component consisting of a 5-ft raising of the upland cells of the existing project. The recommended plan would provide an additional 28 mcy of placement capacity and extend the project life by approximately seven years. Other components of the recommended plan, actions required to complete the existing project, the acceptance of materials from additional Federal channels not included in the original EIS, and development of recreational and educational enhancements that are compatible with the project's ecosystem restoration purpose remained unchanged.

f. Cost Sharing and Local Cooperation. The State of Maryland is the non-Federal sponsor of the Poplar Island Environmental Restoration Project under the existing Project Cooperation Agreement, and to date has contributed more than $59.3 million in cash and in-kind services to support the project. It is anticipated that the existing PCA would be amended to include the expansion of the Poplar Island project. The expansion has a fully funded cost of $329.2 million, which is to be cost-shared $246.9 million Federal (75%) and $82.3 million non-Federal (25%).

The cost estimate was updated to reflect the new recommended plan. The recommended plan of the Final Poplar Island GRR/SEIS has a fully funded cost of $314.2 million, which is to be cost-shared $235.7 million for the Federal government (75 percent) and $78.5 million for the non-Federal sponsors (25 percent).

2. Comments Received Pursuant to the State and Agency Review Process.

The final GRR and final EIS were released for State and Agency Review on September 30, 2005. The State and Agency Review closed on October 31, 2005. Written responses were received from the Maryland Department of the Environment, the United States Environmental Protection Agency, the United States Fish and Wildlife Service and United States National Marine Fisheries Service. Only one substantive comment concerning the recommended plan was received during the review period. The United States Fish and Wildlife Service recommended that the proposed open-water embayment at the project site be limited to approximately 80 acres in size. The Baltimore District responded to the request of the Fish and Wildlife Service stating that the District would continue to work with the Service to address this concern during the PED phase of the project. HQUSACE supports the District's response to the Fish and Wildlife Service.

3. HQUSACE Policy Review Concerns Based on Review of the Final GRR and FEIS. Only one new comment was generated through the review of the final GRR and final EIS, as noted below. This one new comment has been resolved, and HQUSACE has determined that all concerns identified throughout the review process have been resolved.

a. Coordination with the National Marine Fisheries Service (NMFS) yielded only a preliminary concurrence with reservations regarding the proposed 25-foot depth in the southwestern borrow area (Appendix D). It is not clear from the quality control review report (citing ongoing Corps evaluations) whether these concerns have been fully addressed. HQUSACE recommends that the resolution of this issue be documented in the final GRR.

CENAB Response: Concurrence of the NMFS has been obtained for the southwestern borrow area, and has been documented in a memorandum to the project file.

HQUSACE Analysis: The issue is resolved.

4. New HQUSACE Policy Concerns Based On Review of the Draft GRR and EIS.

a. Environmental Analysis of Alternatives. The Chapter 6 text on the environmental evaluation is confusing in that it refers to the expansion with 60% wetlands and 50% wetlands in combination with a 5-foot raising of the existing uplands as Alternatives 1 and 2. Chapter 4, the formulation section, describes six alternatives using a different numbering system: the 60% wetlands in combination with raising is Alternative 6 in Table 4-6 and the 50% wetland with raising is Alternative 4. The alternative nomenclature used in the formulation and evaluation process should be consistent. The report and NEPA documentation need to present the impacts of all the alternatives considered during detailed formulation in order to provide a clear understanding of the options considered and decision-making process.

CENAB Response (September 2005): The plan formulation process was used to screen out expansion options prior to the impacts analysis. Options/alignments considered during plan formulation were not considered as viable project alternatives until the conclusion of the plan formulation process. Therefore, only three options/alignments considered in the plan formulation became Alternatives. For example, the 60% wetland/40% upland with 5-ft raising scheme was identified as a sixth expansion option, but it became designated as Alternative 1 when other options were screened out. The nomenclature used throughout the plan formulation was updated to clarify this point.

HQUSACE Analysis: The issue is resolved.

b. The cost estimate was reviewed and following comments are provided:

1) There is a discrepancy pertaining to the price level used in developing the project costs. The pricing level date stated on the Total Project Cost Summary sheets and Par. 2 of Appendix J is 1 October 2004 whereas the MCACES estimate shows 3 March 2005. The project costs could be overstated due to this discrepancy. This discrepancy should be evaluated and corrected as this has considerable impact on the accuracy of the total project costs and on the economic evaluation of the projects.

CENAB Response (September 2005): The baseline for the project is 1 Oct 04. The dates that are printed on the MCACES estimate and the Total Project Cost Summary sheets will be coordinated to reflect the correct dates. The estimate was escalated from the 1 Oct 04 date. The dates that are printed on the cover sheet of the MCACES estimate (M-II version) are in a text format and are not associated with the calculation of the escalation.

HQUSACE Analysis: The issue is resolved.

2) It is not clear how the escalation factors were determined since there is no information provided on the estimate. The statement (see Par. 2.g, Appendix J) "PPMD provided the escalation factors" is not adequate. ER 111-2-1302 prescribes the use of CWCCIS (latest version) for escalating costs to provide a more realistic funding forecast. Please explain what factors were used and how the factors were developed.

CENAB Response (September 2005): The escalation factors that our PPMD office provided were based on the inflation factors that are developed by the Office of Management and Budget (OMB) dated 31 Mar 04. Par. 2.g, Appendix L (formerly Appendix J) will be revised to clarify the escalation factor statement. Par.13.a of ER 1110-2-1302 states that the OMB factors should be used for predicting future costs. These escalation factors were applied to each FY from FY-05 out to the assumed end of construction in FY-31. The costs from FY-98 to FY-04 are sunk costs and were not escalated by the factors from the CWCCIS.

HQUSACE Analysis: The issue is resolved.

3) The application of a uniform contingency factor to all cost items appear to be not consistent with the information stated in Appendix J. Paragraph 4 states "Significant changes are not anticipated for the final detailed design. For now, a contingency of 10% is reasonable." Whereas Paragraph 5 (last paragraph) states " It is expected that there will be additional revisions to the quantities as the boring data, bathymetric surveys, and typical cross sections are better defined in the design phase of the project. The project costs could be understated due to low contingency factor applied to critical task/cost items. Verify that the contingency factor applied to all task/cost items is appropriate and reflect the risks related to the uncertainties due to insufficient design data.

CENAB Response (September 2005): Significant changes are not anticipated for the construction cost items. The assumed method for constructing the expansion is the same as the method used to construct the original dike sections. The costs for the year to year operations of the site are based on historical data from the on going site operations and are not anticipated to change with the expansion. The design team believes that the quantities that were used in developing the estimate are conservative. The additional revisions to the quantities may be the result of slight changes in the alignment to avoid poor foundation areas and/or the actual quantity and quality of the sand in the borrow areas. The bathymetric data was also considered to be conservative and significant changes are not anticipated based on the final design. Based on discussions with the designer we feel that the 10% contingency would cover these changes.

HQUSACE Analysis: The issue is resolved.

4) The cost information provided in the MCACES estimate report is not sufficient to perform adequate review. Provide a complete MCACES estimate in electronic format.

CENAB Response (September 2005): The electronic format of the estimate will be provided for review. The estimate in the report was limited to the Project Cost Summaries to save paper.

HQUSACE Analysis: The issue is resolved.

5. HQUSACE Policy Review Concerns on the Alternative Briefing Materials.

a. Plan Formulation, Engineering and Other Analysis Issues

1. Authority. It is not clear why the study has been pursued as a GRR under Section 204 authority to modify the existing Poplar Island project rather than as a new project under Section 207. Section 207 of WRDA 96 amended Section 204 of WRDA 92 to redesignate subsection (e) on the authorization of appropriations as subsection (f) and to add a revised subsection (e), which is applicable to larger scale projects such as Poplar Island. Section 204 is a CAP authority, and although there is no individual project cost limit established under 204, the authorized cost of the existing Poplar Island project far exceeds the annual program funding for that authority. The Poplar Island authorization in Section 537 of WRDA 96 specifically exempted that project from the authorized cost limits in the original subsection 204 (e). Policy Guidance Letter 56 and paragraph E-7.b.(6) of ER 1105-2-100 indicate that Section 204 is generally used to pursue lower cost proposals under $5 million that fall within the program funding limit and applications related to O&M activities. Section 207 of WRDA 96, the redesignated Section 204 (e), is described in the guidance as providing a distinct new authority, which is more typically applicable to new work projects and significant investments under O&M. Guidance for Section 204 and 207 is provided in two different sections of ER 1105-2-100. The decision matrix in Table 1 of PGL 56 would seem to indicate that Section 207 is the appropriate authority for the Poplar Island expansion. Modification of the Congressionally authorized Poplar Island project under the Section 204 authority requires evaluation of the post authorization changes including the 902 cost limit. Paragraph 4.b.2 of PGL 56 indicates that Section 207 would require no specific Congressional authorization for implementation, only approval by ASA based on a finding that the investment costs are reasonable for the expected outputs. Given that the formulation requirements and project cost sharing rules are similar under Section 204 and 207, but the study cost sharing requirements and project approval process may differ, the report should clarify the rationale for the authority used to pursue the expansion.

CENAB Response**: The Poplar Island Expansion Project was pursued under the existing project authority (Section 537, which amends Section 204 for Poplar) for the current project, and not Section 207 authority, primarily because the expansion project is considered a modification of the existing project, and not a new project. In addition, if the expansion project were authorized under a Section 207 authority, the non-Federal sponsor would not receive credits for in-kind services (as granted in Section 318 of WRDA 2000),**

and two distinct authorities would apply to different portions of the same project (Section 537/204 authority applied to the existing project; Section 207 authority applied to the expansion project). The implications of the different authorities for Poplar Island expansion project were discussed with HQUSACE during the IPR for the DMMP and PIES project on August 3, 2004, and concurrence was reached that the expansion project should be carried out under the existing authority.

The Section 902 cost limit analysis required under the Section 204 authority is included in Chapter 7 of the Draft GRR/SEIS.

HQUSACE Analysis: The concern is resolved. The discussions at the IPR concluded that the project should proceed under the existing project authority as noted in the response. Poplar Island has its own authority under the Sections 537 and 204, for which the sponsor is allowed credits for the in-kind services it has been performing. Also, the recommended plan includes modifications for completing the ongoing project construction as well as expanding the footprint.

2. Without-Project Conditions. Several aspects of the without-project conditions should be explained further in order to assure that the planning efforts and recommendations are in accord with policy.

(a) Existing Project. The without-project conditions in Section 9.1 of the AFB material portray the existing Poplar Island project as part of the without-project conditions. This infers that the expansion should be considered as a new project rather than as a modification to a proposed project. However, the AFB material states that North Atlantic Division approved the post-authorization analysis of the expansion of Poplar Island in 2001 based on the DMMP preliminary assessment and the state's interim report on implementation of the 2001 Dredged Material Management Act. NAD recommended that the reevaluation of the expansion be conducted concurrently with the DMMP. The Poplar Island Expansion Study was subsequently initiated by a meeting in March 2003. A GRR analysis of the without-project conditions should describe no project in place rather than an existing completed project. Analyses to modify a completed project should follow a different process and feasibility phase cost sharing would apply. Paragraph E-15.f.(1)(a) of ER 1105-12-100, indicates that if an ecosystem restoration project exceeds the cost limitations of Section 204, it may be pursued as a cost shared feasibility study leading to specific authorization, in accordance with existing procedures. This guidance seems to conflict with that in PGL 56 and needs further clarification at HQ. The in-kind services performed in regard to the expansion study by the MPA should be creditable toward the expansion in the event that studies converted to a feasibility type investigation, however the cost sharing would be 50/50 rather than 75/25. Clarification is needed to determine how to proceed and what information to present in the report as without-project conditions.

CENAB Response: Based on additional consultation with HQ, the without-project conditions (No-Action Alternative) evaluated in the Draft GRR/SEIS included the existing Poplar Island project at its authorized, build-out configuration of 1,140 acres with 570 acres of upland habitat and 570 acres of wetland habitat. The existing condition described in Chapter 3 of the Draft

GRR/SEIS is the in-progress project as of 2005. The benefits and impacts assessments were based on probable outcomes based on project operating experience. The existing PIERP project is not yet completed, therefore the proposed expansion project is not a modification to a completed existing project, and feasibility phase cost sharing does not apply.

Because the expansion project will be pursued under the existing Section 537 authority, which amends Section 204 for Poplar only, (see Comment 1) the cost share for the project (including both the proposed lateral/vertical expansion and the design modifications to complete the existing project) will remain 75 percent Federal/25 percent non-Federal, with the exception of the recreational components, which will be cost-shared at 50 percent Federal/50 percent non-Federal and not exceed 10 percent of the total project cost.

HQUSACE Analysis: The concern is resolved by the above response and discussions at the IPR, which was held on 3 August 2004. CENAD and HQ agreed that the no action condition should be to continue building the island to 1,140 acres. Any delay in outputs from completion of the authorized project caused by the proposed expansion will be accounted for in the analysis. The project will proceed according to the GRR process and cost sharing.

(b) Navigation Project Information- The text should explain the project depths, material quality, quantities dredged, and cost sharing for the channel segments, which contribute to the need for dredged material placement capacity through expansion of Poplar Island. This background information on the navigation project may be important in determining whether the project costs and cost sharing for an expansion project are in accord with policy. See E-33.b of ER 1105-2-100

CENAB Response: The authorizations for channels included in the Baltimore Harbor and Channels Federal Navigation project are included in Chapter 1. Text from the Draft DMMP (USACE, 2005) summarizing the dredged material placement need, and the quantity of material dredged from the Upper Chesapeake Bay Approach Channels to the Port of Baltimore authorized for placement at Poplar Island, and for the southern approach channels to the C&D Canal were included in Chapter 2. Continued maintenance dredging within these Federal navigation channels is considered an operation and maintenance cost, and as such, are 100 percent Federally funded. To assess the quality of the sediments proposed for placement at Poplar Island, maintenance material from the channels is tested every three years, in accordance with the Poplar Island EIS. Information about the dredged material testing program is summarized in Chapter 3 of the Draft GRR/SEIS.

HQUSACE Analysis: The concern is resolved by the information in the response and the revised text.

(c) Period of Analysis- Table 4 presents the benefit analysis for the existing Poplar Island project over a 50-year period beginning in the project base year of 2000. It is not clear how this information relates to benefits for an expansion and there is no additional data provided in that regard. It may be appropriate to use the same period of analysis for the reevaluation of expansion under the existing Poplar Island Section 204 authority. However, if the expansion is considered a

new project under Section 207 or requires Congressional authorization due to the significant change in scope and costs, consideration should be given to the 50-year planning period beginning with the base year of operation for the expansion.

CENAB Response: The expansion project will require Congressional re-authorization (under the existing authority) because of the significant change in scope and costs (see Section 902 analysis in Chapter 7). The Island Community Units (ICUs) for the lateral and lateral/vertical expansion scenarios considered in the plan formulation process were calculated through 2060 – a 50-year planning period assuming that the base year for operation of the expansion component would be 2010, following the completion of perimeter dike construction.

HQUSACE Analysis: The concern is resolved by the response and the report analyses, which evaluate the 50-year period following the base year.

(d) Discounting of Ecosystem Units. Table 4 on pages 17 and 18 indicates that the annual benefits for the existing Poplar Island project were determined by discounting the values of Island Community Units in future years using the Federal discount rate. This is not in accord with paragraph E-36.c.(1) of ER 1105-2-100, which indicates that ecosystem restoration outputs are not discounted, but should be compared on an average annual basis, taking into account that the outputs achieved are likely to vary over time. The average annual value obtained from averaging the values shown in each year is about 323.1 ICUs versus the 292.8 shown in the table, which underestimates the outputs due to discounting. The report should be revised to show the average annual ecosystem outputs for the existing and proposed project in accordance with the above policy guidance.

CENAB Response: The calculations for the ICUs were revised, and the Draft GRR/SEIS includes the undiscounted ICUs by project year for the period of analysis. The calculated yearly ICUs were summed and annualized to get the annual ICU amount. Revised calculations are included in Appendix H and were used in the analysis presented in the plan formulation (Chapter 4).

HQUSACE Analysis: The revised calculations resolve the concerns.

(e) Consistency with the DMMP. No mention is made in the AFB material of the base disposal plan for the dredged material, although the project costs under either Section 204 or Section 207 are calculated as the incremental costs beyond the least cost disposal plan (paragraph E-7.b.(6) of ER 1105-2-100). The review team assumes the base disposal plan would be for disposal at the Deep Trough open water site in Chesapeake Bay, which has been precluded from use by state law. Since the ongoing DMMP is required to identify the base plan to accomplish disposal of dredged material in the least costly manner (paragraph E-15.a.(3) of ER 1105-2-100), the text should describe that base plan to assure that the expansion project is consistent with the DMMP and that the correct basis is used to establish the incremental costs associated with the expansion project.

CENAB Response: Dredged material placement in the Deep Trough is the Federal base plan (standard) for the Upper Chesapeake Bay Approach Channels, and open water placement at Pooles Island is the Federal base plan for the C&D Canal Approach Channels, as indicated in the Draft DMMP (USACE, 2005). A summary of the main components of the DMMP, including an explanation of the Federal standards, is included in Chapter 2 of the Draft GRR/SEIS. Chapter 2 also explains that the expansion of Poplar Island is a recommendation of both the Federal and State of Maryland DMMP processes. In addition, other USACE guidance, specifically Policy Guidance Letter No. 40 (expansion of existing sites), is summarized and presented to support the Poplar Island Expansion Study.

HQUSACE Analysis: The concern is resolved by the response and text changes in the draft report.

(f) Environmental Conditions and Outputs. The report should present quantified information on the environmental attributes of the areas, which may be affected by the alternatives under the without-project future conditions, and the relative difference under the with-project conditions as a basis for calculating the ecosystem benefits and discussing their significance. In addition, any cultural attributes in the study area should also be addressed. See E-35.a and Exhibit G-4 of ER 1105-2-100 on comparison of with- and without–project conditions.

CENAB Response: The environmental benefits of the existing project (without-project future conditions) and the existing project plus the lateral/vertical expansion (with-project future conditions) were each quantified using Island Community Units (ICU), as described in the AFB materials (see Appendix G of the Draft GRR/SEIS). The method, developed by USACE-Baltimore with input from a working group involving resource agency representatives, calculates ICU to quantify environmental benefits (with a focus on animal communities) over the life of the restoration project. This method to quantify environmental benefits was reviewed and approved by Federal and State resource agencies, and was also employed in the *Draft Mid-Chesapeake Bay Island Ecosystem Restoration Feasibility Study and EIS*. ICUs were calculated through 2050 under the without-project future conditions, and through 2060 under the with-project future conditions. The discussion, comparison, and evaluation of the results are included in the plan formulation (Chapter 4).

Both Phase I and Phase II underwater cultural resources surveys were conducted within the project Study Area. Results of these surveys were incorporated into both the existing conditions (Chapter 3) and the impacts (Chapter 5) chapters of the Draft GRR/SEIS.

HQUSACE Analysis: The concern is not fully resolved**.** The text on most probable future conditions on page 3-93 indicates that the planning period was 20 years rather than 50 years. The above response indicates that a different period is used to calculate the average ICUs for the with-project (through 2060) and without-project (through 2050) conditions. The same period should be evaluated for both conditions in order to measure the differences and establish the average annual values used for the incremental analysis. The no action alternative discussions on page 4-36 of the draft GRR indicate that its period of analysis is a 50-year period beginning in

2010. The incremental cost analysis also appears to have compared the period 2010 to 2060. The text should be revised to provide a consistent discussion of the planning period.

CENAB Response (September 2005): The text in the most probable future conditions (pg. 3-93 of the Draft GRR/SEIS) will be revised to reflect the fact that the planning period was 50 years, as used to calculate average ICUs.

HQUSACE Analysis: The issue is resolved.

3. Plan Formulation.

(a) Alternatives. Page 1 of the AFB material indicates that consideration is being given to raising the upland dikes of the existing Poplar Island project to provide additional capacity, expansion of the footprint, additional restoration and enhancements of Poplar Harbor and Jefferson Island, and redefining the material that is acceptable for placement at Poplar Island. The formulation text then focuses primarily on the expansion scenarios and it is not clear what consideration has been given to raising the upland dikes for the existing Poplar Island project, the effect of redefining materials, or the other restorations. Further clarification is needed to assure that the formulation has given full consideration to all reasonable structural and non-structural alternatives in identifying the tentatively selected plan. See paragraph 2-3.c(1) of ER 1105-2-100.

CENAB Response: The Draft GRR/SEIS includes discussion of each study component included in the Notice of Intent (NOI), and recommendations/conclusions for each study component are included in the recommended plan. Vertical raising of the existing upland dikes alone was eliminated as a viable option within the plan formulation process (Chapter 4 and Engineering Appendix), but was evaluated in conjunction with the lateral expansion as the best possible alternative that would achieve the goal of increasing habitat in the most efficient manner. The vertical raising will provide sufficient upland capacity to handle projected inflow quantities and support the development of a greater proportion of wetland habitat within the lateral expansion. Additional recreational/educational opportunities are discussed in the plan formulation (Chapter 4), impacts (Chapter 5) and recommended plan (Chapter 6). Changes to the existing Project Cooperation Agreement (PCA) to potentially accept dredged material from additional Federal, State, and local channels were addressed by writing a white paper and through formal discussion with Federal and State agencies. Documentation of the results of the white paper and the decisions of the agencies involved are included in the Draft GRR/SEIS (Chapters 6 and 9, respectively).

HQUSACE Analysis: The concern is resolved by the response and the text changes included in the draft report.

(b) Incremental Analysis/Cost Effectiveness. The AFB material presents no information relative to the outputs and costs of the alternatives considered as a basis for formulating the most cost effective plans and identification of the NER plan. Information is presented on various

alternatives considering variations in scale, layout, and mix of habitat types, however there is insufficient information presented on the outputs of alternatives to allow for concurrence with the tentatively selected plan. Paragraph E-14.g.(2) of ER 1105-2-100 on Section 207 beneficial use projects states that when the incremental Federal costs are greater than 25% or $300,000, a cost effectiveness and incremental cost analysis is needed to demonstrate that the investment in each separable increment of beneficial use is justified by the outputs, as discussed in Section V of Appendix E. This information should be presented in the draft report to facilitate further policy review.

CENAB Response: A summary of the cost effectiveness and incremental cost analysis is included as part of the plan formulation process in the Draft GRR/SEIS (Chapter 4), and the entire analysis is presented as Appendix H to the report.

HQUSACE Analysis: The concern partially resolved by the analysis documented in the draft report. Scale and orientation alternatives are evaluated based on public coordination and engineering criteria. The cost effectiveness/incremental cost analysis addresses the proportion of wetland and upland habitats in the expansion footprint as well as the 5-foot raising of dikes around the upland habitat section of the island as originally authorized. However, the text on page 4-25 notes that the NMFS suggested an option (#3) to include open water cells late in the process, which is currently being evaluated. It is not clear how this will be presented in the final formulation analysis and CE/ICA, or whether this has potential to become the recommended plan. The final report needs to document the outcome of formulation including this option, and explain how it was considered in the CE/ICA analysis.

CENAB Response (September 2005): CENAB has incorporated the open-water embayment concept as an additional alternative in the GRR/SEIS. This decision is documented in the plan formulation chapter (Chapter 4, Section 4.9) as an analysis that was completed after the end of the formal plan formulation process. The section includes a discussion of agency consultations, design changes and capacity/sand borrow implications, changes to the ICU methodology and the results, and the CE/ICA analysis for the recommended alignment with the open-water embayment feature. Based on the results of both the plan formulation process and the impacts assessment, the alignment with the open-water embayment was chosen as the recommended plan for the GRR/SEIS. Information in subsequent chapters and all appendices, including the dike design; the Endangered Species Act Section 7 coordination; the Section 404(b)(1) Clean Water Act evaluation; and the project cost estimate, were revised accordingly.

HQUSACE Analysis: The issue is resolved.

(c) Recreational Features. The text on page 1 and PMP indicate that consideration is to be given to recreational opportunities at the expansion project, however the text on page 12 indicates that recreation is not being formulated until after the recommended plan is finalized. The recreational features need to be formulated and optimized to assure that an appropriate level of investment is included, the features are in accordance with Exhibit E-3 of ER 1105-2-100, the

recreation is incrementally justified, the recommended Federal investment in recreation does not increase the Federal cost share of the project by more than 10 percent (para. E-49.b.(1)(e)), and the recreational activities do not diminish the value of the ecosystem restoration measures (para. E-30.h).

CENAB Response: Recreational components were included in the plan formulation, impacts evaluation, and the recommended plan for the Draft SEIS/GRR (Chapters 4, 5, and 6 respectively). The evaluation in the Draft SEIS/GRR includes consideration of both active and passive recreational components, and describes the potential locations and impacts of these components. Most likely, a Categorical Exclusion (CATEX) will be required to implement these components. In accordance with ER 1105-2-100, the proposed recreational components will not diminish the value of the ecosystem restoration and will not increase the Federal cost share of the project by more than 10 percent. Recreational components within the proposed northern lateral expansion will be incorporated into the project only after the completion of perimeter dike construction, and access will be controlled.

HQUSACE Analysis: The concern is partially resolved. The report discusses the recreational features that may be included in the recommended project. However, there is a question on whether all measures discussed are appropriate. The recreational features described on pages 4-43 to 4-46 of the report include visitor center improvements, a camping area, food services, and other features that do not appear in the checklist of facilities, which may be cost shared in recreational developments at ecosystem restoration projects. See Exhibit E-3 of ER 1105-2-100. Although camping facilities and food services were later eliminated from the recommended plan, visitor center improvements are still included and it is not clear to what extent the recommended recreation features comply with the guidance. The descriptions of recommended features should be clarified to assure that features proposed as cost shared items are appropriate and in accord with Corps policies. Any improvements proposed which are beyond those listed would have to be provided at local expense. In addition, the report should provide information on the incremental justification of the recreational features in accordance with E-49.b.(4) of ER 1105-2-100.

<u>CENAB Response (September 2005)</u>: The sections in the document pertaining to the recreational components of the document were revised to be more in-line with the guidance in Appendix E of ER 1105-2-100. In addition to removing active recreation components, such as camping facilities and food services, from consideration, the descriptions of the proposed recreational/educational components were clarified. Specifically, a separate visitor center is not proposed, but space within a proposed operations building, such as conference rooms, laboratory space, and restroom facilities, could be made partially accessible to visitors. Because the proposed operations building would not be solely a recreational feature of the project, its purpose and function were clarified in the discussion. Also, information describing the secondary recreational benefits of project design features, such as the proposed rock reefs and open-water embayment were added to the section. Sections 4.11.3 (plan formulation), 5.3.3 (impacts), 6.9 (recommended plan), 10.7

(summary), and the executive summary were each revised to clarify the discussion describing the recreational components of the project.

HQUSACE Analysis: The issue has been resolved. The status of the recreation features has been clarified in the report, as noted in the above CENAB response.

(d) Trade off of NER/NED. It is not clear from the AFB material what trade offs may be made between NED and NER considerations in identifying the tentatively recommended plan. The report should discuss the NED/NER tradeoffs (increased disposal capacity/NED cost effectiveness versus reduced ecosystem outputs due to dike raisings or reduced percentage of wetlands) as a basis for plan selection in accordance with paragraph 2-4.f of ER 1105-2-100.

CENAB Response: A NER/NED tradeoff analysis is not applicable to the Poplar Island expansion project. Tradeoff analysis would only be appropriate if by implementing the beneficial use plan, either the NED costs or the NED navigation benefits of the Baltimore Harbor & Channels deep draft navigation project increased/decreased. Neither is the case here. In addition, the expansion of Poplar Island is not a multipurpose project - it is a beneficial use of dredged material project – and tradeoff analysis is only applicable for multipurpose projects. As per ER 1105-2-100, (Appendix E, p. 72) "beneficial uses which are not part of the base plan shall be considered separable elements of the management plan and will be pursued in accordance with guidance implementing other available authorities". The beneficial use purpose is a separable element independent of the navigation project. The base plan is the NED plan for the dredging project, and the existing condition is the availability of dredged material from the navigation project. All costs attributable to the dredging project are independent from costs to develop the island restoration project. All costs above the base plan cost are attributable to the beneficial use project.

HQUSACE Analysis: This concern is not resolved**.** The report presents a preferred engineering alternative and an environmentally preferred alternative, with the distinction being that the engineering alternative reduces the percentage of wetlands to 60% from 50% and increases the quantity of dredged material from 28 to 30 million cubic yards. This represents a tradeoff of between habitat outputs and increased disposal capacity, and would also result in NED impacts by deferring the next investment in providing beneficial use disposal capacity by 2 years. Trade offs may relate to multipurpose or multi-objective planning according to paragraph 2-4.f of ER 1105-2-100. Disposal capacity seems to significantly affect the NER formulation and recommendations. The tentatively recommended plan description on page ES-8 indicates that the ultimate proportion of wetlands versus uplands will be a function of the assumptions for the dredged material placement plan and that the expansion project could produce a wetland percentage anywhere from 50% to 60%, which represents any one of the three alternatives [4 (50%), 5 (55%), and 6 (60%)] that considered northern expansion in combination with the dike raising. Plan 4 was eliminated for not being cost effective, but is designated the Engineering Preferred Alternative. Plan 5 was found to be cost effective, but was not the best buy in the incremental analysis. For the selected plan to potentially result in any of three alternatives seems contrary to the requirements for selecting a plan as contained in Step 6 of the P&G. Paragraph 2-

3.f. in ER 1105-2-100 states that the selected plan must be shown to be preferable to taking no action or implementing any of the other alternatives considered during the planning process. The Executive Summary and Risk Analysis in section 6.8 should be revised to address this concern regarding the plan selection. The report should discuss tradeoffs between the planning objectives.

CENAB Response (September 2005): The Draft GRR/SEIS has been revised to include an additional alternative with an open-water embayment incorporated into the footprint of the proposed lateral expansion. Based on the results of the environmental benefits analysis, the alignment with the open-water embayment is the environmentally preferred alternative, and based on the results of the CE/ICA analysis, the alignment with the open-water embayment is also the cost-effective plan (NER plan). The difference in the environmental benefits and the capacity between the alignment with the open-water embayment and the other alternatives considered is illustrated at the end of the plan formulation chapter (Chapter 4, Table 4-21), while the differences in the impacts of the alignment with the open-water embayment compared to the other alternatives considered are discussed throughout Chapter 5 and summarized in the impacts matrix (Table 5-15). Choosing the open-water embayment as the recommended plan after the impacts assessment in Chapter 5 removes the ambiguity about the chosen alternative – no longer can the choice of this alternative potentially result in one of several of the multiple alternatives evaluated, as previously indicated in the Draft GRR/SEIS. Because of this, the risk analysis section was removed from Chapter 6 and the appropriate sections in the Executive Summary.

The NED/NER tradeoff in the GRR/SEIS is presented in terms of placement capacity compared to total environmental benefits of the project. Of the alternatives evaluated, the recommended plan, the alignment with the open-water embayment (Alternative 3), has the least placement capacity (28 mcy), but the greatest number of Island Community Unit (ICUs_ (9,768 ICU) (Chapter 4, Table 4-21). However, the recommended plan has additional environmental benefits not accounted for in the ICU analysis – substantially less sand borrow outside the footprint of the project, (decreasing impacts to Bay bottom habitats) and an increase overall habitat diversity, complexity, and trophic exchange within the project. In this specific case, the overall environmental benefits of the project represent a justifiable tradeoff for the loss of capacity resulting from incorporating the open-water embayment into the expansion alignment.

HQUSACE Analysis: The issue is resolved.

4. Post Authorization Change Analysis. As presented, the tentatively recommended plan entails significant modifications of the existing Poplar Island project under the existing authority of Section 204. The GRR should present an analysis of the proposed changes including the Section 902 cost limitations as a basis for determining the appropriate approval authority, in accordance with Section III, Appendix G of ER 1105-2-100.

CENAB Response: Changes to the existing project, including activities related to design modifications to complete the existing project, regardless of whether the lateral/vertical expansion moves forward, are discussed in the impacts section and recommended plan for the Draft GRR/SEIS (Chapters 5 and 6, respectively). A Section 902 analysis has been included in the Draft SEIS/GRR (Chapter 7).

HQUSACE Analysis: The concern is partially resolved. The analysis included in the draft report appears adequate to address the concern based on the tentatively selected plan, however the final report should include revisions as needed to address the PAC relative to the final plan being recommended for authorization.

CENAB Response (September 2005): While the recommended plan for the lateral and vertical expansion of Poplar Island has changed in the GRR/SEIS, actions required to complete the existing project have not changed. The text evaluating these project components (closure of Cell 6, raising the existing upland temporary dikes from +23 ft MLLW to +25 ft MLLW, restoration of internal borrow sites within wetland Cell 4 and construction of temporary cross dikes within wetland Cell 5, relocating the southern access channel and turning basin, and construction of a new discharge, pier, and bulkhead structures to accommodate ongoing operations after the closure of Cell 6) was augmented to better describe impacts related to sand borrow and Bay bottom disturbance.

HQUSACE Analysis: The issue is resolved.

5. Engineering.

(a) Initial Screening. The discussion in the text relative to Table 5 should clarify any counterintuitive results. For example, the highest ranked sites, Alternatives 6 and 7, are the smallest of the seven alternatives, about 25% to 50% of the size of the existing 1140-acre Poplar Island site. The more detailed evaluations discussed on pages 21 and 22 only discuss site scales for 630 acres and less. It isn't clear why larger sites comparable to the existing project would not be more competitive. Also, the ranking for borrow quality and quantity shows Alternative 6 as having the second highest score for that parameter with a score of 12 and the highest along with three other alternatives for borrow location with a score of 15. These parameters seem to contribute significantly to the overall site rankings. However, the text on page 21 for the 313-acre expansion explains that the alternative is too small to efficiently handle the 3.2 mcy annual placement requirements and the site size does not encompass sufficient borrow material to construct the containment dikes. This raises questions about the conclusions from the initial screening and should be discussed.

CENAB Response: Each of the five larger alignments considered (ranging from 749 to 1129 acres) included expansion into areas south of the existing project. Alternatives that included expansion to the south were eliminated based on public opposition. Areas south of the existing project were identified as highly productive and highly utilized areas of particular concern to

local watermen. Therefore, only alignments to the north of the existing project were carried into the next phase of the plan formulation.

Within the engineering screening evaluation, the borrow location and the borrow quantity/quality criteria were given a higher weighting factor, as compared to other criterion, because they are critical parameters with respect to initial construction costs and potential environmental impacts. Consequently, together these two parameters do contribute significantly to the overall score for each alignment.

While Alignment 6 was highly ranked in the engineering screening, its overall capacity (313 acres) was not sufficient to handle the projected volume of dredged material and was too small to support proper wetland cell development. Dredged material can only be in wetland cells in small annual volumes; therefore, sufficient upland placement capacity is needed to accommodate the projected dredged material capacities during each dredging cycle. Therefore, Alignment 6 was eliminated from further consideration during the plan formulation process. Subsequent to the AFB, additional engineering assessments and analyses were conducted to optimize the configuration of the northern alignment to take advantage of the benefits of the site. The result was a conceptual alignment of 575 acres consisting of 550 acres of upland/wetland habitat and a 25-acre tidal gut to facilitate flushing within the wetland cells. Additional discussion of the plan formulation process for the Draft GRR/SEIS is included in Chapter 4 and the Engineering Appendix.

HQUSACE Analysis: The concern is resolved. This issue was discussed at the IPR and it was concluded that the team's understanding changed as studies progressed and this has been documented in the report.

(b) Armor Stone. The armor stone is a significant project cost item. It isn't clear from the AFB material what alternatives were considered to the armor stone, which might lower costs (geotextile designs or other means of armoring the dikes). Such options should be discussed in the Engineering Appendix of the report.

CENAB Response: Methods, materials, and assumptions for armoring the perimeter dikes within the proposed northern lateral alignment are based on those currently in use at the PIERP. During previous phases of this project, consideration was given to alternative means of providing slope protection that might be less costly than stone. However, locally available natural stone armor has proven to be more cost effective than other slope protection methods that would provide an equivalent level of protection. A brief discussion was added to the Engineering Appendix.

HQUSACE Analysis: The concern is resolved by the above response and the text changes in the draft report.

(c) Project Costs. The AFB material does not include cost estimates for the alternatives to support the formulation and plan selection or a status of the MCACES estimate. The formulation

of alternatives should be based on the complete incremental annual costs of the alternatives beyond the base disposal plan, including construction, contingencies E&D and S&A, monitoring, LERR, OMRR&R, and IDC. The costs estimates should be discussed in the report and an MCACES estimate presented. See ER 1105-2-100, paragraph E-35.c.(1) and Exhibit G-4.

CENAB Response: Preliminary cost estimates developed during the Poplar Island Reconnaissance Study were used in the plan formulation process (Chapter 4). The MCACES estimate for the recommended plan was completed and incorporated into the Draft GRR/SEIS (Appendix J).

HQUSACE Analysis: The concern is not fully resolved. The final report should include the MCACES estimates for the final selected plan.

CENAB Response (September 2005): The MCACES estimate for the final selected plan (the open-water embayment alignment) was incorporated into the GRR/SEIS to write and develop the summary tables in Chapter 7 (Plan Implementation). The MCACES summary tables are also included as part of Appendix L – Project Cost Estimate.

HQUSACE Analysis: The issue is resolved.

b. Cultural resources

1. Section 16.2. Additional Studies. Cultural Resources Surveys. HQUSACE recommends that the term “State Historic Preservation Organization” be changed to “State Historic Preservation Office” or “State Historic Preservation Officer”.

CENAB Response: **Comment noted, ‘State Historic Preservation Office’ is the terminology used in the Draft GRR/SEIS.**

HQUSACE Analysis: The concern is resolved.

2. Section 19.2. HQUSACE recommends that the Baltimore District add a cultural resources specialist to the PIES PDT.

CENAB Response: A cultural resources specialist from within USACE-Baltimore District, Scott Watson, was added to the PIES PDT.

HQUSACE Analysis: The concern is resolved.

3. Page 10. Project Management Plan, CULTURAL STUDIES SUBACCOUNT (30AE). Subsection A.

a. Recommend changing the term "submarine archeological features" to "submerged archeological features or sites. . ."

CENAB Response: In the cultural resources sections of the Draft GRR/SEIS, potential submerged archeological features or sites identified during the Phase I survey were referred to as potential cultural targets identified by acoustic or magnetic anomalies.

HQUSACE Analysis: The concern is resolved.

b. Recommend changing the term "additional submarine survey" to "additional remote sensing and/or diver hands-on survey . . ."

CENAB Response: In the cultural resources sections of the Draft GRR/SEIS, surveys conducted to identify the targets located in the Phase I survey were referred to as Phase II surveys. Phase II surveys for the Draft GRR/SEIS were conducted using archeological diver investigations.

HQUSACE Analysis: The concern is resolved.

c. The narrative states: "If any potentially significant cultural resources are located, Phase II investigations will be conducted. . . "This does not appear to be consistent with the approach identified in Section 16.2, mentioned above, wherein Phase II work is identified as being deferred and potentially significant cultural resources are being avoided and marked with a buffer. The district should consider and address this apparent inconsistency or explain why there might be more than one approach to Phase II investigations.

CENAB Response: **A total of six potential cultural targets (identified by magnetic and/or acoustic anomalies) within the project Study Area were identified over the course of Phase I archeological investigations conducted in December 2003-February 2004 and January 2005. Based on the location of the cultural targets, USACE-Baltimore District decided to proceed with Phase II diver investigations of two cultural targets – one located within the proposed alignment (Target T-13) and one located east of Jefferson Island (Target T-29), within the Study Area. Currently, USACE-Baltimore District plans to avoid and mark the other four cultural targets based on the buffer determined by the SHPO. Coordination with the SHPO is ongoing, and additional Phase II studies may be warranted.**

Reference:

U.S. Army Corps of Engineers (USACE). 2005. ***Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement.*** **February. Draft.**

HQUSACE Analysis: The concern is not fully resolved. The outcome of the ongoing SHPO coordination should be documented in the final report and SEIS.

CENAB Response (September 2005): Additional coordination with SHPO, and the results of the additional cultural resource surveys were incorporated into the final GRR/SEIS.

HQUSACE Analysis: The issue is resolved.